

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number  
**WO 2005/049562 A2**

- (51) International Patent Classification<sup>7</sup>: **C07D**
- (21) International Application Number:  
PCT/US2004/038373
- (22) International Filing Date:  
17 November 2004 (17.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/520,380 17 November 2003 (17.11.2003) US  
60/547,572 26 February 2004 (26.02.2004) US
- (71) Applicant (for all designated States except US): **AROMA-GEN CORPORATION** [US/US]; 4625 Merrimac Lane North, Plymouth, MN 55446 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **SELIFONOV, Sergey, A.** [RU/US]; 4625 Merrimac Lane North, Plymouth, MN 55446 (US).
- (74) Agent: **WHELAN, Dorothy, P.**; Fish & Richardson, P.C., P.A., Suite 3300, 60 South Sixth Street, Minneapolis, MN 55402-1104 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL CYCLIC OXYGENATED COMPOUNDS HAVING COOLING, FRAGRANCE, AND FLAVOR PROPERTIES, AND USES THEREOF

(57) Abstract: Compositions that include compounds capable of producing a cooling sensory effect such as certain hydroxy-ketones and hydroxy-aldehyde compounds, their cyclic semi-ketals and semiacetals, and other derivatives thereof. The compounds impart a refreshing and cooling sensation of long duration and high potency, and thus are useful in a variety of formulations, including consumer products such as mouth formulations, food and beverage products, tobacco and smoking articles, fragrances, toiletries, ointments, and the like.

WO 2005/049562 A2